

WHAT IS CLAIMED IS:

1. In a security system comprising a plurality of security devices in communication with a control unit over a serial data communications loop, a method for detecting marginal data transmissions from any of the security devices, comprising the steps of:

10 a) the control unit receiving a data transmission from a security device, the data transmission comprising a plurality of bit intervals in which a logic 1 level is assumed by the control unless a logic 0 level is received from the security device;

15 b) sampling the data transmission at a first predetermined time during the bit interval to obtain a first sample value;

20 c) sampling the data transmission at a second predetermined time during the bit interval to obtain a second sample value, the second predetermined time being later than the first predetermined time;

25 d) if the first sample value is a logic 1 and the second sample value is a logic 0, then indicating that the data transmission from the security device is marginally recoverable.

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2. The method of claim 1 comprising the further steps of:

130 e) if the first sample value is a logic 0 and the second sample value is a logic 0, then indicating that the data transmission is acceptable.

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140 3. The method of claim 1 comprising the further steps of:

145 10 e) if the second sample value is a logic 1 then, assuming logic 1 as the transmitted data bit, making no indication regarding the acceptability of the data transmission.

150 15 20 25 30

155 4. The method of claim 1 comprising the further steps of:

160 15 prior to sampling the data transmission at a first predetermined time during the bit interval, taking a pre-sample at a third predetermined time prior to the first predetermined time, and

165 20 if the pre-sample value a logic 1, the first sample value is a logic 0, and the second sample value is a logic 0, then indicating that the data transmission is acceptable with marginal distortion.

170 25 30 5. The method of claim 1 further comprising the steps of, if the data transmission has been indicated to be marginally recoverable, then lowering a baud rate of transmission between that security device and the control unit by a pre-determined increment.

175 6. The method of claim 1 further comprising the steps of, if the data transmission has been indicated to be marginally

recoverable, then providing an output indication.

7. The method of claim 4 wherein the third predetermined time is approximately 1/3 through the duration of the bit interval, the first predetermined time is approximately 2/3 through the duration of the bit interval, and the second predetermined time is near the end of the bit interval.

10 8. A security system comprising:

a) a plurality of security devices;  
b) a control unit interconnected on a serial data communications loop to each of the security devices; the control unit comprising

15 i) means for receiving a data transmission from a security device, the data transmission comprising a plurality of bit intervals in which a logic 1 level is assumed by the control unless a logic 0 level is received from the security device;

20 ii) sampling means for sampling the data transmission received from a security device, wherein the sampling means samples at a first predetermined time during the bit interval to obtain a first sample value and at a second predetermined time during the bit interval to obtain a second sample value, the second predetermined time being later than the first predetermined time;

30 iii) indication means for indicating that the data transmission from the security device is marginally recoverable if the first sample value is a logic 1 and the

second sample value is a logic 0.

9. The system of claim 8 wherein the indication means is  
5 adapted to indicate that the data transmission is acceptable  
if the first sample value is a logic 0 and the second sample  
value is a logic 0.

10. The system of claim 8 wherein the indication means is  
10 adapted to make no indication regarding the acceptability of  
the data transmission if the second sample value is a logic 1.

11. The system of claim 8 wherein:

15 the sampling means is further adapted to take a pre-  
sample at a third predetermined time prior to the first  
predetermined time during the bit interval, and

20 the indication means is further adapted to indicate  
that the data transmission is acceptable with marginal  
distortion if the pre-sample value is a logic 1, the first  
sample value is a logic 0, and the second sample value is a  
logic 0.

25 12. The system of claim 8 further comprising means for  
lowering a baud rate of transmission between that security  
device and the control unit by a pre-determined increment if  
the data transmission has been indicated to be marginally  
recoverable.

30 13. The system of claim 8 further comprising output means for  
providing an output indication if the data transmission has  
been indicated to be marginally recoverable.

14. The system of claim 11 wherein the third predetermined time is approximately 1/3 through the duration of the bit interval, the first predetermined time is approximately 2/3 through the duration of the bit interval, and the second predetermined time is near the end of the bit interval.

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